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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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DILWORTH & BARRESE, LLP
333 EARLE OVINGTON BLVD.
SUITE 702
UNIONDALE, NY 11553

EXAMINER	
D AGOSTA, STEPHEN M	

ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/803,649	HUH ET AL.	
	Examiner	Art Unit	
	Stephen M. D'Agosta	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 7-9, 11-14, 18-25, 27-29, 26-28 and 40-41* is/are rejected.

7)☒ Claim(s) *5,6,10,15-17,26,30-35,39 and 42* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 March 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Double Patenting

Two double patenting rejections are put forth:

1. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-42 rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-30 of U.S. Patent No. 6,782,271. Although the conflicting claims are not identical, they are not patentably distinct from each other because the define similar concepts relating to determining forward data rate and forward transmission power in a mobile terminal/network based on C/I measurements.

2. A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

A statutory type (35 U.S.C. 101) double patenting rejection can be overcome by canceling or amending the conflicting claims so they are no longer coextensive in scope. The filing of a terminal disclaimer cannot overcome a double patenting rejection based upon 35 U.S.C. 101.

The following claims are rejected under 35 U.S.C. 101 as claiming the same invention as that of certain claims of prior U.S. Patent No. 6,782,271. This is a double patenting rejection.

Patented claim 1 = new claims 1 + 2 + 4

Patented claim 15 = new claims 20 + 21

Patented claim 15+16 = new claims 20 + 21 +22

Patented claim 15+17 = new claims 20 + 21 + 23

Patented claim 15+17+18 = new claims 20 + 21 +23 + 24

Patented claim 27 = new claims 37 + 38

Patented claim 29 = new claims 40 + 41

Claims **4, 21-24, 38 and 41** stand rejected based **solely** on this DBL PAT rejection since these claims are identical to the previously allowed claims (eg. there is no prior art rejection below for them). Please amend or cancel.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 7-8, 11-14, 18, 20, 25, 27, 29 and 32 rejected under 35 U.S.C. 103(a) as being unpatentable over Lomp et al. U.S. Patent 5,991,329 and further in view of Cudak et al. U.S. Patent 6,253,063 and Souissi et al. U.S. Patent 5,850,605 and Gardner et al. US 5,857,147.

As per **claim 1 and 20**, Lomp teaches a method for determining a forward transmission power level (abstract and C3, L15-17) in an access terminal of a mobile communication system, comprising the steps of

measuring SNR (C3, L17-19) [eg. a received carrier-to-interference ratio (C/I) of a forward pilot channel] and;

determining margin information for determining a forward transmission power level by calculating a difference between the measured SNR (eg. C/I) and the reference SNR (eg. reference C/I) if the measured C/I is not identical to the reference C/I (C3, L17-33); and

transmitting margin information over a reverse transmission channel (C3, L24-26). Lomp teaches that the mobile station selects an initial data rate for communications between the BTS and mobile and communicates this through an uplink to the BTS (abstract) and that the forward data rate is determined (C3, L1-4). Lomp compares SNR measurement to predetermined value (C3, L17-33)

But is silent on:

- forward data rate

- determining a forward data rate by matching the measured C/I with a reference C/I based on a data rate of packet data

- transmitting the determined forward data rate (over reverse channel/DRC)

Cudak teaches modifying an initial data rate (eg. raising or lowering) based on the determined difference level of interference condition (abstract). This reads on determining data rate since Cudak will change the rate based on interfernce. Further to this point is **Gardner** who teaches method/apparatus for determining transmission data rate in a communication system (title) based on forward and reverse link usage (abstract).

Souissi teaches sending a data based upon selecting a transmitter that is associated with the lowest C/I value that is chosen from the C/I values which exceed a C/I threshold value (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify Lomp, such that the data rate can be determined based upon comparision of the measured C/I value with a reference C/I value and then transmitting the forward data rate in the reverse channel, to provide means for power and data rate control based upon C/I levels as the mobile roams.

As per **claims 2, 12 and 27**, the combo teaches claim 1/11/25 wherein the step of determining the forward data rate comprises the steps of:

selecting a largest one of C/I thresholds that is smaller than the measured C/I stored in a C/I table as a reference C/I;

determining data rate associated with the selected reference value.

As shown above, Cudak teaches modifying an initial data rate (eg. raising or lowering) based on the determined difference level of interference condition (abstract). This reads on determining data rate since Cudak will change the rate based on interfernce. Further to this point is Gardner who teaches method/apparatus for determining transmission data rate in a communication system (title) based on forward and reverse link usage (abstract).

Souissi teaches sending a data based upon selecting a transmitter that is associated with the lowest C/I value that is chosen from the C/I values which exceed a C/I threshold value (abstract).

As per **claims 3 and 13**, The combo teaches the method as claimed in claim 1/11, wherein the step of determining the margin information comprises the steps of:

calculating a difference between the reference SNR (eg. C/I) and the measured SNR (eg. C/I) [C3, L17-22];

But is silent on: determining margin information by converting the calculated difference into a value comprised of a predetermined number of data bits.

Cudak teaches an initial data rate between mobile and base station that is adapted to become a final data rate (eg. higher or lower) after the measurement and comparison of the interference level between mobile and base station (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify The combo, such that the calculated difference is converted into a number of bits (and/or data rate), to provide a means of modifying the data rate based on calculated interference.

As per **claims 7 and 18**, The combo teaches the method as claimed in claim 1/11, wherein the SU sends the forward channel error as part of a reverse channel information signal [C3, L24-26] (**eg.** transmitting the determined forward data rate and margin information comprises the step of transmitting the determined forward data rate and the margin information for one slot over the reverse transmission channel).

As per **claim 8**, Lomp teaches a method for determining a forward transmission power level (abstract and C3, L15-17) in an access network of a mobile communication system, comprising the steps of

receiving the margin information over a reverse link (abstract discusses ARPC – see the bottom half of the abstract where it starts "In the ARPC system....."); decreasing the transmission power level using the received margin information and transmitting the data at the decreased transmission power level (abstract – see bottom half). Lomp teaches that the mobile station selects an initial data rate for

communications between the BTS and mobile and communicates this through an uplink to the BTS (abstract) and that the forward data rate is determined (C3, L1-4).

But is silent on

- a forward data rate
- receiving the forward data rate and margin information over a reverse
- creating data to be transmitted at the received data rate.

Cudak teaches modifying an initial data rate (eg. raising or lowering) based on the determined difference level of interference condition (abstract). Also see **Gardner** as discussed above in claim 1.

Souissi teaches sending a message(s) based upon selecting a transmitter that is associated with the lowest C/I value that is chosen from the C/I values which exceed a C/I threshold value (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify The combo, such that the data rate can be transmitted based upon the received data rate and margin information over the reverse link, to provide means for power and data rate control as per control data received via the reverse link.

As per **claim 11**, Lomp teaches a method for determining forward transmission power level in a mobile communication system (abstract and C3, L15-17), comprising the steps of:

measuring, in an access terminal, an SNR (C3, L17-19) (eg. received C/I of a forward pilot channel);

determining a difference between the measured SNR (eg. C/I) and the reference SNR (eg. C/I)as margin information (C3, L17-33); and

transmitting the determined forward data rate and margin information over a reverse transmission channel (C3, L24-26); and

decreasing a transmission power level in an access network by power corresponding to the margin information (C3, L43-50). Lomp teaches that the mobile station selects an initial data rate for communications between the BTS and mobile and

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communicates this through an uplink to the BTS (abstract) and that the forward data rate is determined (C3, L1-4).

But is silent on:

- a forward data rate

- determining the forward data rate by matching the measured C/I with a reference C/I;

- performing forward transmission at the forward data rate at the decreased transmission power level, upon receipt of the forward data rate and margin information,.

Cudak teaches modifying an initial data rate (eg. raising or lowering) based on the determined difference level of interference condition (abstract).

Souissi teaches sending data based upon selecting a transmitter that is associated with the lowest C/I value that is chosen from the C/I values which exceed a C/I threshold value (abstract). See **Gardner** above as discussed in claim 1 as well.

It would have been obvious to one skilled in the art at the time of the invention to modify The combo, such that the data rate can be determined based upon matching the measured C/I value with a reference C/I value and then transmitting at the forward data rate at decreased power level, to provide means for power and data rate control based upon C/I levels as the mobile roams.

As per **claim 13**, The combo teaches the method as claimed in claim 11, wherein the step of determining the margin information comprises the steps of calculating a difference between the reference SNR (eg. C/I) and the measured SNR (eg. C/I) [C3, L17-22];

But is silent on: determining margin information and converting the calculated difference into a value comprised of a predetermined number of data bits.

Cudak teaches an initial data rate between mobile and base station that is adapted to become a final data rate (eg. higher or lower) after the measurement and comparison of the interference level between mobile and base station (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify The combo, such that the calculated difference is converted into a number of bits (and/or data rate), to provide a means of modifying the data rate based on calculated interference.

As per **claim 14**, The combo teaches the method as claimed in claim 11, **but is silent on** step of transmitting the determined forward data rate and margin information comprises the step of transmitting the data rate for one slot and the margin information for a next one slot over the reverse transmission channel. Lomp does teach that margin data is transmitted over the reverse channel (C3, L24-26).

Cudak teachs the base station transmitting to the mobile station the selected final data rate during a time slot (figure 2, #212) that is close in proximity to a next time slot (figure 2, #213).

It would have been obvious to one skilled in the art at the time of the invention to modify the combo, such that it comprises the step of transmitting the determined forward data rate for one slot and the margin information for a next one slot over the reverse transmission channel, to provide means for transmitting the determined rate as quickly as possible so as to convert the mobile over to the new rate.

As per **claim 25**, The combo teaches a method for determining a forward transmission power level in an access network of a mobile communication system (abstract and C3, L15-17), comprising the steps of

receiving a measured SNR (eg. C/I) over a reverse link (C3, L43-45);

determining margin information for determining the forward transmission power level by calculating a difference between the measured C/I and the reference C/I, when the measured C/I is not identical to the reference C/I (C3, L34-39); and

decreasing the transmission power level using the calculated margin information and transmitting the transmission data at the decreased transmission power level (C3, L43-50). Lomp teaches that the mobile station selects an initial data rate for

communications between the BTS and mobile and communicates this through an uplink to the BTS (abstract) and that the forward data rate is determined (C3, L1-4).

But is silent on:

- a forward data rate

- determining a forward data rate by matching the measured C/I with a reference C/I based on a data rate of the packet data;

- creating data to be transmitted at the determined forward data rate;

Cudak teaches modifying an initial data rate (eg. raising or lowering) based on the determined difference level of interference condition (abstract). Also see **Gardner** as discussed in claim 1.

Souissi teaches sending a data based upon selecting a transmitter that is associated with the lowest C/I value that is chosen from the C/I values which exceed a C/I threshold value (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify The combo, such that the data rate can be determined based upon comparision of the measured C/I value with a reference C/I value and then transmitting the forward data rate in the reverse channel, to provide means for power and data rate control based upon C/I levels as the mobile roams.

As per **claim 29**, The combo teaches a method for determining a forward transmission power level in a mobile communication system (abstract and C3, L15-17), comprising the steps of

measuring, in an access terminal, a received SNR (C3, L17-19) [eg. C/I of the forward pilot channel];

transmitting the measured C/I over a reverse DRC channel (C3, L24-26)

determining margin information for determining the forward transmission power level by calculating a difference between the measured SNR (eg. C/I) and the reference SNR (eg. C/I) when the received C/I is not identical to the reference C/I (C3, L17-33); and;

decreasing the transmission power level using the calculated margin information; and transmitting the transmission data at the decreased transmission power level (C3, L43-50). Lamp teaches that the mobile station selects an initial data rate for communication between the BTS and mobile and communicates this through an uplink to the BTS (abstract) and that the forward data rate is determined (C3, L1-4).

But is silent on

- forward data rate

- determining, in an access network, the forward data rate by matching the measured C/I with a reference C/I associated with a data rate of packet data upon receipt of the measured C/I over a reverse link;

- creating transmission data associated with the determined data rate;

Cudak teaches modifying an initial data rate (eg. raising or lowering) based on the determined difference level of interference condition (abstract).

Souissi teaches sending a data based upon selecting a transmitter that is associated with the lowest C/I value that is chosen from the C/I values which exceed a C/I threshold value (abstract).

It would have been obvious to one skilled in the art at the time of the invention to modify The combo, such that the data rate can be determined based upon comparision of the measured C/I value with a reference C/I value, to provide means for power and data rate control based upon C/I levels as the mobile roams.

As per **claim 32**, The combo teaches the method as claimed in claim 29, wherein the SNR (eg. C/I) is transmitted over the reverse channel (C3, L24-26) and is interpreted as being sent only one (since there is no teachings about how many times it is sent) [eg. one slot of the data rate control channel, without repetition].

Claims 9, 28 and 36 rejected under 35 U.S.C. 103(a) as being unpatentable over LCGS and further in view of Ahn et al U.S. Patent 6,272,124 (hereafter referred to as Ahn).

As per **claims 9, 28 and 36**, The combo teaches the method as claimed in claim 8/25, **but is silent on** wherein a forward pilot channel transmits a signal at the constant transmission power level regardless of the forward data rate or the margin.

Ahn teaches the transmission of the pilot at a continuous (eg. constant) power level (C3, L64-65).

It would have been obvious to obvious to one skilled in the art at the time of the invention to modify The combo, such that the access network transmits a signal on the forward pilot channel at a constant transmission power level regardless of the data rate or the margin, to ensure that there is no interference from a pilot signal that can have its power increased.

Claims 37 and 40 rejected under 35 U.S.C. 103(a) as being unpatentable over LCGS and further in view of Bender US 6,556,549.

As per **claims 37 and 40**, The combo teaches teaches a transmission apparatus for mobile communication system (abstract and C3, L15-17) that measures SNR (C3, L17-19) [eg. a received carrier-to-interference ratio (C/I)] comprising;

A first multiplexer for TDM of forward data rate and margin information (figure 5a, #525-527),

Encoder(s) and spreader(s) (figure 5a, #525-527),

But is silent on reverse pilot and RRI to an output spreader.

Bender teaches use of RRI (A signal indicative of the selected reverse link data rate is provided to message generator 1008. In response message generator 1008 generates a signal indicative of the selected reverse link data rate and provides the reverse rate indicator (RRI) message to multiplexer 1016. In addition, reverse link controller 1006 provides a signal indicative of the selected reverse link data rate to reverse link traffic processing element 1018

(C11, L4-11) AND The Walsh spread reverse link traffic data is provided to complex PN spreader 1012. Multiplexer 1016 multiplexes the data rate control message and the reverse rate indicator message with pilot symbols and provides the multiplexed data to Walsh modulator 1014. Walsh modulator 1014 spreads the multiplexed data in accordance with the Walsh code zero and provides the spread data to complex PN spreader 1012 (C11, L33-40).

It would have been obvious to obvious to one skilled in the art at the time of the invention to modify The combo, such that RRI is used, to provide feedback means for the system.

Allowable Subject Matter

Claims 5-6, 10, 15-17, 26, 30-35, 39 and 42 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

These claims recite highly specific designs not found in the prior art of record.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen M. D'Agosta whose telephone number is 571-272-7862. The examiner can normally be reached on M-F, 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bill Trost can be reached on 571-272-7872. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen M. D'Agosta/
Primary Examiner, Art Unit 2617